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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,461	01/22/2002	Tadashi Chiba	Q68179	6888

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EXAMINER	
GAKH, YELENA G	
ART UNIT	**PAPER NUMBER**
1743	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/031,461	CHIBA ET AL.	
	Examiner	Art Unit	
	Yelena G. Gakh, Ph.D.	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *15-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☒ Claim(s) *5,7,8,12 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on 12/09/04 is acknowledged. Claims 1-21 are pending in the application.

Response to Amendment

2. Rejection of claims 1-5 under 35 U.S.C. 112, second paragraph is withdrawn in view of the amendment.

Election/Restrictions

3. Newly submitted claims 15-21 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claims 15-21 are drawn to an automatic analysis and control method, classified in class 436, subclass 164, *vs.* an automatic analysis and control system, classified in class 422, subclass 55 (claims 1-14), with the apparatus applicable for optical measurements of concentration of any composite mixture in a solution.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 15-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "a vertically elongate plating solution dwell portion having a cross sectional area of not less than two times of the cross sectional area of a sampling pipe" and "a trap mechanism for preventing fine bubbles in said plating solution from being fed into said analytical cell" as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being

amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The specification is objected to as not providing "a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to" practice the invention in its best mode.

The specification discloses in the section "Description of the Invention": "(6) an automatic analysis and control system according to any one of (1) to (5) above, wherein a vertically elongate plating solution dwell portion having a cross sectional area of not less than two times of the cross sectional area of a sampling pipe is provided in the course of a sampling passage for introducing the plating solution into the analytical ceil, an inlet to the plating solution dwell portion is provided at an upper portion, and an outlet from the plating solution dwell portion is provided at a lower portion, whereby a trap mechanism for preventing fine bubbles in the plating solution from being fed into the analytical cell is provided" (page 8, lines 26-37). In the section "Best Mode for Carrying out the Invention" the same part of the system is seemingly disclosed in a following way: "as shown in FIG. 9, the measuring portion B comprises an

absorbance measuring unit 10 and a pH cell 12. The piping up to the pH cell 12 is 3 mm in inside diameter, and the pH cell 12 is 14 mm in inside diameter. A column 14 for supplying and storing a saturated KCI solution is connected to the pH cell 12 and a temperature sensor 16 is provided. The inside diameter of a tube piped from the place of the temperature sensor 16 and bypassing an absorbance cell l0a is greater than the inside diameter of the absorbance cell 10a, so that the plating solution containing bubbles would not be introduced into the absorbance cell 10a" (pages 18, the last subparagraph and 19, the first subparagraph)".

It is hard from comparison of these two paragraphs to associate "a vertically elongate plating solution dwell portion having a cross sectional area of not less than two times of the cross sectional area of a sampling pipe" with the structure described on pages 18 and 19. Moreover, the structure described on pages 18 and 19 is not apparent. From Figure 9 it is not clear, what is "a tube piped from the place of the temperature sensor 16 and bypassing an absorbance cell 10a", and if it is bypassing the absorbance cell 10a, then why there is a problem of introducing bubbles into the absorbance cell 10a? The structure of the apparatus recited in the claims 6, 13 and 20 is not disclosed in the specification in clear and exact terms.

Claim Objections

7. Claims 5, 7-8, 12 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 5 and 12 recite a function, rather than a structural element of the apparatus, which makes the limitations improper.

The electroless plating solution is not a part of the parent claims, since it is not recited in the body of the claims, and therefore specific plating solution recited in claims 7 and 14 does not further limit the structure of the automated system recited in the parent claims.

8. Claims 9-14 are objected to because of the following informalities: they obviously erroneously refer to claim 1, rather than claim 8, as a parent claim. Appropriate correction is required.

Double Patenting

9. Applicant is advised that should claim 3 be found allowable, claim 10 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 6 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims recite "a vertically elongate plating solution dwell portion having a cross sectional area of not less than two times of the cross sectional area of a sampling pipe", which is not disclosed in specification in a clear way and is not demonstrated in a drawing. It is not clear, what the "plating solution dwell portion" is and which sampling pipe it is compared with, which makes the claims not enabled by the specification.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 6 and 13 are rejected, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite "a vertically elongate plating solution dwell portion having a cross sectional area of not less than two times of the cross sectional area of a sampling pipe" and "a

trap mechanism for preventing fine bubbles in said plating solution from being fed into said analytical cell", which are not disclosed in the specification in a clear and definite terms, which renders the claims unclear and indefinite.

In claims 4 and 11 are not clear as to what "a measuring time table" is; is it provided with the timer, or is it a part of the software controlling the process? No clear physical element of the apparatus is recited in the claims associated with the time table, which renders the claims unclear and indefinite.

Claims 5 and 12 recite a function, rather than a structural element of the apparatus, which makes the limitations improper.

In claim 8 the expression "measuring transmissivity or absorbance of at least one of different wavelengths" is not clear as to how it limits the structure of the "absorbance measuring unit", since any "absorbance measuring unit" measures "transmissivity or absorbance of at least one of different wavelengths".

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. **Claims 1-4, 7-11 and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshio et al. (JP10-142143A).

Yoshio discloses an automatic analysis and control system for electroless nickel plating solution to control the concentration of Ni, comprising spectrophotometer capable of measuring two different regions of the wavelengths, a short wavelength of 600 to 650nm and a long wavelength of 750 to 800nm, capable of measuring wavelength of 550 nm along with 600 nm, with the wavelength having a half width of 10 to 90 nm; and a computer for calculating the concentration and displaying the calculation results. Automatic analysis and control system

controlled by a computer inherently includes a timer, which can be set to any time periods, including at least 15 sec delay before optical measurements.

16. **Claims 8-9 and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Asu et al. (JP10-142144A).

Asu discloses an automatic system for analyzing electroless composite plating solution comprising a spectrophotometer using a vertical flow cell with a cross sectional area of at least two times of the cross sectional areas of the input and output (see Figure), and a timer, which is a part of any CPU used in an automated analytical method, which is capable of being set at any predetermined time value, including 15 sec of a delay time; the spectrophotometer is capable of a conventional calibration and measuring wavelengths with a half-width of the peaks no more than 100 nm, which is a conventional width for absorbance peaks.

Claim Rejections - 35 USC § 103

17. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. **Claims 5 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Acy or Yoshio in view of Anno (JP 355023433A).

While Yoshio or Asu do not specifically teach periodic washing the flow cell and taking optical measurements when the flow cell is filled with water as a reference measurement, Anno teaches such calibration for optical measurements of the solutions in the flow cell by washing the flow cell with water and taking measurements of the cell filled with water as a reference value.

It would have been obvious for any person of ordinary skill in the art to introduce the apparatus provided with the washing means in order to wahs the cell and take refrence

measurements as disclosed by Anno in Acy's or Yoshio's apparatus, because this is a conventional way of obtaining a "blank spectrum" in any optical measurements.

Response to Arguments

19. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Louch (US 3,895,124)* teaches "process for controlling the coercivity of a cobalt or cobalt/nickel coating applied by an electroless plating process" (Title); *Araki et al. (US 4,350,717)* disclose "controlling electroless plating bath" (Title); *Sakai (US 4,484,936)* discloses "degassing assembly" for removing bubbles from electroless plating baths.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yelena G. Gakh
8/6/04